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REPORTS ON DEVELOPMENT OF NEW TECHNOLOGIES

Commutator Coil Soldering System

[Sofia SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE in Bulgarian No 6, 1980 p 86]

[Text] The system was designed by the Institute for Metal Knowledge and Metal Technology of the BAN [Bulgarian Academy of Sciences]. It is protected with Invention No 44122/1978, the patent for which has been requested in the United States, Japan, the FRG, Great Britain, France, Italy, Switzerland, the USSR, the GDR, Czechoslovakia, Poland and Romania, with a view to the creation of conditions of licensing and eventual protection of exported items. Its authors are P. Minchev, Khr. D. Khristov, S. Lazarov, St. Balinov and N. V. Yordanov.

The system's prototype was tested under operational conditions at the G. Kostov plant. The experiments confirmed the effectiveness of the system and its very good technical and economic indicators, which are the following:

The quality of the DC models produced by the plant is upgraded to class F (so far the plant has not been able to produce class F motors);

the reliability of the commutator core and entire motor is enhanced as a result of the guaranteed high quality of all soldered spots;

the amount of electric power needed for melting and keeping the solder in a liquid state is reduced several fold because of the tenfold lesser quantity required (the current tubs required 500-600 kg of solder with a 20 kw power, while the new system requires 50 to 60 kg of solder and a 6-7 kw power);

compared with the Schlater system, the productivity of our system is higher by a 5-10 factor, while power intensiveness per unit of output is lower by a factor of about 5-6.

The developed model was used in the production of 30,000 rotors for ET-15/7.5/14 motors (worth over 2.4 million leva), which could not be produced with any other type of technology.

In 1980 working documents were drafted and three semi-industrial systems were developed and applied at the G. Kostov plant in the manufacturing of ET-15/7.5/14 model motors. Preparations are being made for the application of the system in all types of motors whose total output is about 90,000 per year.

Valeropotrates Separation Method

[Sofia SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE in Bulgarian No 6, 1980 p 87]

[Text] The following inventions are based on the development of the "Sedoval," a new medical drug developed by the Institute of Organic Chemistry and Institute of Physiology of the BAN: No 25012/1973—"Method for the Separation of Valeropotrates [valepotriati]," and No 30129/1975—"Method for the Stabilization of Valeropotrates." Authors: Prof Nik. Marekov of the Institute of Organic Chemistry, and corresponding member Prof Dr Ves. Petkov of the Institute of Physiology (heads) and scientific associate Gim. Popov, scientific associate N. Khandzhieva, senior scientific associate Dr P. Manolov and chemist Z. Sekulova.

The purpose of this project is the application of a new and effective technology for the separation of valeropotrates contained in the roots of *Valeriana officinalis* and their utilization in the production of a drug with a central sedative, antispasmodic, and antiarrhythmic effect. The valeropotrates are sensitive to moisture, light, oxygen, temperatures over 60°C and a substantial number of chemical agents which affect them and worsen their healing properties. The existing patented methods for the extraction of valeropotrates from the plant are unable to avoid this basic shortcoming.

Our inventions offer a technology which avoids the breakdown effect of the chromatographic adsorbents used so far. For the first time, they have been replaced by alkalotelluric silicates which are chemically inert toward valeropotrates. The effectiveness of the chromatographic treatment is improved by the preliminary treatment of the vegetal extract with petroleum ether. The valeropotrates are stabilized with special additives. This increases their stability in storage several fold. The process requires inexpensive and accessible materials, which is yet another of its advantages.

These inventions may be applied both in the production of pharmaceuticals and in scientific studies in the area of valeropotrates.

The Institute of Organic Chemistry of the BAN has developed a technology for the extraction of an active substance consisting essentially of valeropotrates. It has been tested under semi-industrial conditions. The technology will be applied in the production of the new drug Sedoval, whose clinical tests have yielded very good results in the treatment of various types of nervous diseases, particularly those combined with cardiac insufficiency. The Scientific Research Chemical-Pharmaceutical Institute is working on improvements in the technology of the ready-to-use drug with a view to its forthcoming regular production.

Sulfaminic Acid Production

[Sofia SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE in Bulgarian No 6, 1980 pp 87-88]

[Text] The technology was developed by the Sectorial Scientific Research Laboratory for Chemical Agents and Preparations (ONIL KhRP) of the BAN on the basis of invention No 40070/1978, protecting the method for obtaining sulfaminic acid. Authors: scientific associate N. Minkova, scientific associate M. Krusteva and chemist St. Trendafilova.

The advantage of the method is the possibility of producing under simpler technological conditions a highly pure product in considerably greater amounts compared with methods applied so far.

Sulfaminic acid is used in galvanizing, as an additive in electrolytic tubs; it is used for titration purposes in analytical practices and as a basic raw material for the production of its pure salts (nickel, lead, sodium, ammonium and other sulfamates).

In the past sulfaminic acid was not produced in the country but had to be imported from capitalist and noncapitalist countries. The technology is being used in the regular production of the acid at the Krasnaya Zvezda plant in Vladaya. In 1979-1980 the economic effectiveness of its application totaled 2,985 leva per ton and 30,000 rubles per ton in foreign currency.

Means for Plant Control

[Sofia SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE in Bulgarian No 6, 1980 p 88]

[Text] This development of the Institute of Plant Physiology of the BAN is protected as invention No 26120/1974. Authors: senior scientific associate Dr Em. Karanov, senior scientific associate and candidate of chemical sciences G. Vasilev, L. Khristova, E. Dineva and Sv. Plachkova.

The means covered by the invention are derivatives of itaconic acid (mostly mono- and dialkyl esters). They are superior to the retarding effect of one of the most extensively studied retarding agents in the world--the monodimethyl hydrazide of succinic acid (Alar, Kaylar and others). They accelerate the blossoming of the fruits and delay the aging processes of corn plant organs. These chemicals are used in plant growing.

One of the offered derivatives is the monomethyl ester of itaconic acid (preparation MEIK-150), which was used in 1980 by a number of okrug agroindustrial unions (OAPS) in Khaskovo, Plovdiv, Pazardzhik and other okrugs, on an area totaling 35,000 decares, as a means for speeding up the blossoming, fructification and ripening of early field-grown tomatoes. The expected economic results of its application are on the order of 100 leva per decare. The chairman of the National Agroindustrial Union (NAPS) has issued the order that this chemical be applied by all its branches. In 1980 it was experimentally used under greenhouse conditions with a view to extending its application to the greenhouses in the country and to the multiplication of results.

Automated Methods

[Sofia SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE in Bulgarian No 6, 1980 pp 88-89]

[Text] A collective of scientific workers at the Institute of Mechanics and Biomechanics of the BAN, headed by Prof Dr of Medical Sciences At. Anchev and senior scientific associate K. M. Petrov, has developed and applied a method, algorithms and a packet of applied programs for the automated computation and optimizing of the geometric and technological features of cog cutting for conical transmissions with spiral cogs in the area of transportation machine building.

The development makes it possible to shorten the process of designing and mastering new items; it insures the independence of our manufacturing from foreign firms and plants; it eliminates defects in cog cutting and insures a stable production process; it improves the quality of output and upgrades the productivity of cog cutting machines; optimal variants may be chosen for the production process, in accordance with technological requirements and available instruments.

This development has been installed and is being used at the Madar Trucks Combine in Shumen, the T. Petrov Machine Plant in Sofia, the Khan Krum Machine Repairs Combine in Turgovishte and the Yu. Gagarin plant in Plovdiv.

The results of the application of this development at the T. Petrov Machine Plant in Sofia were the following: The plant's handling capacity in the production of cone-shaped cog pairs with spiral cogs was increased by about 50 percent; expensive cog-cutting machines were used; in 6 months, in 1978, with the help of these machines, the plant produced 11,700 set of cone-shaped cogs worth 566,000 leva. They were shipped to plants which were waiting for this item and a corresponding number of fork-lift trucks were assembled and completed (Balkan Machine Plant in Lovech, and 6 Septemvri Economic Combine for Fork-Lift Trucks in Sofia).

The product was awarded the badge "For Contribution to Technical Progress" for 1979 by the State Committee for Science and Technical Progress and a medal at the international anniversary exposition of the Exhibition of the Achievements of the National Economy in Moscow.

Superhard Boride Linings

[Sofia SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE in Bulgarian No 6, 1980 pp 89-90]

[Text] Metal processing and machine building use large amounts of cutting and other metal processing hard-alloy and steel instruments, as a result of which their increased strength and operational characteristics are of great national economic significance. In accordance with this important task, a research collective, headed by Academician G. Bliznakov of the Institute of General and Inorganic Chemistry of the BAN, has developed an original method and technology for the boride lining of transferred metals of hard alloys.

The method and technology consists of saturating parts and instruments with boride lining at a specific temperature in an inert environment. The process takes place in a specially designed installation, created by the same institute, with a productivity of 300,000-400,000 plates per year.

The effectiveness of the method was proved through comparative tests of hard-alloy reversible plates, not subject to resharpening, used as cutting edges in lathes and milling machines, drawing nozzles and steel parts, under industrial conditions.

The lined hard-alloy nozzles used in the calibration of rolled steel items (rods and wire) showed a double and triple resistance compared with untreated nozzles and the average increase in the resistance to wear and tear on lined hard-alloy sharpened is 100 to 150 percent higher compared with those produced in series.

Industrial tests of steel metal processing instruments subjected to abrasive wear showed a wear resistance twice that of unprocessed parts.

The development was given "K" rating and awarded the Vermeille Gold Medal at the third international show of inventions and new equipment held in Geneva, and has been applied by several plants in the country.

Acceleration Polymerization Method

[Sofia SPISANIE NA BULGARSKATA AKADEMIIA NA NAUKITE in Bulgarian No 6, 1980 p 90]

[Text] A collective of scientific workers of the Central Laboratory for Physical and Chemical Mechanics of the BAN, headed by corresponding member Yord. Simeonov, has developed an efficient method and technology for the accelerated polymerization of standard machine building parts made of fiberglass in a high-frequency field.

This technology, used by branches of the Ministry of Machine Building and others, shortens severalfold the production process, increases labor productivity and improves the physical and mechanical indicators of the goods.

The substitution of fiberglass for metal parts and elements, as a result of the suggested method and technology, will save metal, reduce the weight of machines and equipment, and upgrade their competitiveness in the international marketplace.

The development offers extensive opportunities for multiplied results within the system of the Ministry of Machine Building and elsewhere. For this reason it will be applied in 1981 and 1982 by the specialized Center for the Application of Plastics in Machine Building.

5003

CSO: 2202

FODDER PRODUCED FROM PHARMACEUTICAL INDUSTRY WASTE

Bratislava PRAVDA in Slovak 4 Feb 81 p 1

[Article by Jana Janki: "Two Problems at One Stroke"]

[Text] Poniky--Final results have indicated that it is a good idea with dual usefulness. So-called "peanut material," which is left after acid hydrolysis in the production of antibiotics, i.e., such drugs as penicillin and the like, was until recently nothing but waste. The workers at Biotika in Slovenska Lupca made an effort only to dispose of it properly so that it did not pollute or damage nature. But last year, when they began to haul this liquid or semiliquid material to a nearby agricultural enterprise, JRD CSSP [Czechoslovak-Soviet Friendship United Agricultural Cooperative] in Ponike, they ceased to have this problem.

The people at Poniky--but not they alone--thus found a good source of feed material, which could replace grain concentrates to a considerable extent in domestic animal feeds.

High Nutrient Content

Peanut meal used as a feed has a smell reminiscent of roasted coffee beans. But first it must be passed through the cooperative's BS-6 hot-air dryer. However, as JRD's head engineer Jan Sur. told us, this equipment had to be partially adjusted so that it could be used to dry semiliquid material. Biotika also partially processes it, increasing its content of dry material. In this way, less water is hauled, which shows up in transport expenditures, to say nothing of the fact that shipping a liquid on the highways in ordinary trucks, even with modified side walls, would certainly not help the state of the roads or traffic safety. Understandably, the farmers were impatiently waiting for the results of analysis of this feed material they had found. The peanut material proved to be indeed a valuable waste, and not to use it for feeding livestock would have been nothing short of a sin. For it contains up to 45 percent nitrogen-containing materials, of which 25 to 30 percent is digestible, thus supplying the most important substances in animal nutrition. It also contains large quantities of starches and far from negligible amounts of fats and fiber.

Thus we may say that dried peanut meal is a protein concentrate. It is because of the high content of digestible proteins that a ton of this meal is equivalent in nutrient content to 3 tons of wheat, and thus is a valuable additive for making up feeds.

Since the material is the waste from a factory which produces medicines, we were curious as to whether it contained any harmful substances which might get into milk and meat and thus spoil those foods. Repeated tests by staff members of the cognizant organization, the Central Agricultural Control and Testing Administration in Zvolen, confirmed that there is no danger. After test use in the last half of the year, at the beginning of this year Poniky was able to begin regular use of this nontraditional feed material. Although it will be given only to milk cows and other cattle, it is also good for sheep and for fattening lambs.

Extra Work, But ...

The ideal method of administering peanut meal is to add it to pelletized feed. But the cooperative in Poniky has no pelletizing line, so they add the meal to other traditional feeds. Their experience shows that it should not be thrown directly into the troughs, because a large dose at one time does not taste good to the animals, and in addition the powdery form of the meal causes respiratory diseases. Mixing it into other feeds, so that it makes up about 5 to 10 percent, is accordingly extra work for the feeders in the true sense of the expression. But the saving on grain, accompanied by a livestock efficiency which not only does not fall, but actually rises, well repays this effort.

Thanks to the experiment with the use of peanut meal, the livestock production department chief, Michal Benuska, DVM, who is also the special feed administration monitor, notes that the annual yield per milk cow increased last year to 3,300 liters, which is about 100 liters more than in the previous year. The daily weight increase when the meal was used to fatten cattle was 83 decagrams, which is 3 decagrams greater than in 1979. One other noteworthy circumstance was observed: since this feed is not given to milk cows on all of the farms, its effect on the quality of milk could also be compared. It was found that on the farm in Poniky where the meal is given, the fat content of the milk was higher than on the other farms.

Every year about 100 tons of this material, which until recently was a waste, is left over from the production of medicines at Biotika and Slovenska Lupca. Naturally it is not all used at Poniky. About 80 percent of it goes to other cooperatives after drying, grinding and packing in bags. Since the driers are used at the peak agricultural work periods for drying other crops as well, a facility has been built near them for temporary storage of the peanut material.

We were also interested in the ultimate saving of grain concentrates. Since no one has yet used the new feed material on a regular basis, no precise figures are available. but if we take account of the fact that each ton replaces 3 tons of grain, we find that thanks to the initiative of the cooperative workers at Poniky, and to the generous cooperation of the people at Biotoka, every year the republic is saving about 3,000 tons of grains.

8480

CSO: 2402

PROGRAMMERS, SYSTEMS PLANNERS FROM PRIVATE ORGANIZATION

Budapest MAGYAR NEMZET in Hungarian 19 Mar 81 p 5

[Interview with Imre Csenterits, of the System Computer Technology PJT, by Andras Faludi]

[Text] It is a private multiple residence building on Jozsef Koszta Street, in Buda. There are mail boxes and a gate telephone on the fence. On one mail box is written "Imre Csenterits" and under it "System Computer Technology PJT." A pleasant woman opens the door when we ring. The husband is not at home, he is at work--in the afternoon it will be possible to speak with the leader of the country's first, and so far only, private systems planning organization.

With his first sentences he corrects us in two respects. They are not "private" but rather, literally, as the abbreviation indicates, a civil law association (polgari jogi tarsasag). This is something unique; they are not artisans nor is this a legal person. Rather it is "an association of private persons formed for an economic purpose." Enterprises and cooperatives could organize such a thing also. In the second place he is not the leader, but rather only one of three equal members. But for the time being his residence is the postal address and thus we contacted him.

Two Are Incognito

In his main job my host is a systems planner for wage accounting in one of our state administrative organs. They know there that he wants to become independent via the association; in our interview he agreed to be quoted by name. Not so his two colleagues. For the time being the other systems planner--we will call him R.--and the programmer--hereinafter P.--want to remain incognito.

[Question] Are they afraid perhaps that their chiefs will not take it well that they have formed a systems planning association?

[Answer] Publicity might give us several disadvantages. Where are they happy to learn that one of their workers will be leaving sooner or later? If System makes it and there is enough work then obviously this is what we will be doing all day. If it comes out that we are members of the association then perhaps our work will be bad all at once, work we did to their satisfaction previously. It is different with Imre; his superiors are good guys, and a person has to "go public" to make contacts, hold talks, get the work of the association started--so they can find us.

[Question] Could you tell us what this work is that you do and why it requires a three member private association, whatever you call it legally?

[Answer] What we would like to do is practically the same as what is being done by the state computer enterprises engaged in systems planning. The present economic atmosphere makes possible the creation of small, flexible organizations in every area. We want to create such a thing in this profession also. We would take work in every area of computer technology work procedures--developing conceptions, preparing organizational recommendations, programming. The task might be stockpile management, computerizing financial tasks, manpower and wage management, fixed assets records or computer solutions for other management tasks.

[Question] Do you think that state enterprises and cooperatives will hire you to do their organizational and computer technology tasks instead of the well known large organizational firms? What guarantee is there that you can do such work?

[Answer] There will certainly be customers. The state organizational institutes work with long time limits and they are rather expensive. We will make it if we do the work more quickly and more cheaply. The guarantee is the work we have been doing, and which we are now doing for our [client] firms. And something else. If the association does not deal effectively with some task then we will not ask for a single penny. But this will not happen. We know the trade, all three of us have more than a decade of experience. We will undertake only what we can do, and we will lay on the table perfect solutions, from organization to programs.

The First Talks

No doubt about it, the three young experts obviously trust themselves, and the other two. Csenterits--who is a graduate economist--has one child, with another expected soon. R. has graduated from accounting school; he and P., the programmer, each have two children. They studied organization and programming in the courses of SZAMOK [Computer Technology Training Center]. This is the staff of System, which has decided to go independent in this unique area.

[Question] Who has turned up so far, what are your prospects?

[Answer] We are holding talks with two firms. One is a commercial enterprise. The goal is stockpile management and keeping records on orders, watching these and putting them on a computer. The other interested firm wants us to solve computer control, tracking and evaluation of transportation tasks. And a lot of people in the trade have sought us out. They want to join! It seems they consider the prospects fantastic. For example, there is an apprentice organizer, a woman, who wants to join us when her three years are up. But as long as there is not enough work the three of us are enough.

[Question] With one programmer? Obviously you either have your own small computer or you are renting machine hours somewhere. The computer centers work with different systems and programming languages. How can one person adapt to these?

[Answer] P. is an old boy in the trade. He can work in several program languages. But the advantage of System is in its flexibility too. If need be, we expand the

circle. We could contract a programmer on a one time basis, for one task, who understood just that computer we had to deal with.

[Question] And how will you be received by an enterprise? Two young men come in, upset everything and say how one must work hereafter so the computer program will work? And, this is the thing, two "private persons"?

[Answer] And if the two persons, like ourselves, come from a state firm, is the situation any different? In any case, we will not undertake such a task as rebuilding the organization of a plant or office. Of course, that would be a nice big commission, but that would hardly go over at the state level. We organize work procedures, a system or routing for documents. So that the task can be done with a computer.

[Question] Your customers will have a director, deputies, main department chiefs. Why should they ask for outside aid for organization?

[Answer] Organization is an independent profession, just as is what those you listed do. We could not do their work and they do not understand computerized organization. Up to now the most trouble has come from the fact that a computer program is prepared according to the existing enterprise work system. In general this was not as good as having the entire administrative section work in a manner which best suited the computer. They left out the reorganization. This now recognized in more and more places so the state organizational institutes have a lot of work. Fortunately, the employment of organizers has become a useful fashion also. So we feel we have an advantage in this area. Obviously those coming to us will not be those who would like a program or organization because it is now "chic" but rather enterprises which really want to change.

How Much Can They Earn?

He explained enthusiastically that they would be earning more when the work of the association gets started. The pay of an experienced systems planner is 5,000-6,000 forints. And premiums have been decreasing recently. For this they must do, in general, work worth 1,000 forints per day at the enterprise. Considering 270 working days per year this is 250-300 forints' worth of work. This is the average. If a firm has 10 systems planners it can do about 3 million forints' worth of work. And not everyone works the same. Some work twice as much as others. It is difficult to measure the loan distribution, but nobody even tries to very hard. So wages in the profession are largely uniform.

[Question] You [must] feel that you will work more than the others, and better too, or else you would not risk going independent.

[Answer] We are not passing judgment on our colleagues. But we know our own strength and we will do the jobs we undertake. We will work as much as we want and if there are more jobs the income will be greater too. If we ask half to two-thirds of the prices charged by state organizational institutes, and with much shorter time limits, the customers will be well served. But we are taxed twice. First as an association and then according to income, as private traders. It would be worth going up to 200,000 forints per year; above that the tax indexes are very high.

R. then added: For his part he decided on an association because of the flexible assignment of work too. If he wants he can work day and night; if he wants he can rest. There will be no boss, no office commitments. For him this is at least as important as the money. If he earns only as much as before he will be satisfied.

[Question] So, as far as you can see, everything is in order for the System Association?

[Answer] Yes. If we get the jobs we are discussing we can start. Of course, for the time being there are unclarified questions, legal gaps. We do not belong anywhere. Someone called the KISOSZ [National Free Organization of Retailers] about us; they objected that we were not artisans. There are few civil law associations of private persons in the country. We know of only one, one formed by the rappel artists to wash the outside of windows on tall buildings. This is now their occupation. We could undertake voluntary payments into a pension fund. Like every citizen we would get medical care, but not sick pay. Even here we could undertake a voluntary monthly payment. Such an association is still a curiosity but perhaps as they increase in number the appropriate officials will find solutions to these problems. In the final analysis this is a small plant for a special task, similar to group property. As of now our brains are the common property; later there may be two desks, a little office and perhaps a telephone. That is all we need, we do not even want to hear about more....

[Question] So System is now born. When can we say that it is on its feet?

[Answer] On paper the association came into being with the court registration in February. We are getting a stamp and letterhead and already have a bank account. In our talks our references are the "state" work done so far. We will be grown-up after completing our first independent job. Then we will not have to say, We were capable before, trust us; we will send them to the firm where System has already worked. Either our system will be working there and we will get more work, or the association goes under. Full responsibility--our material interest and security--demand the best work we are capable of. This interest coincides with general economic goals. Certainly the large state organizational people can feel this too. For our undertaking effectiveness is literally the only possibility for survival....

8984

CSO: 2502

HUNGARY

ECONOMIC PROBLEMS OF COMPUTER USE

Budapest SZAMITASTECHNICA in Hungarian Jan 81 p 2

[Unsigned article: "Conference on Problems of an Economic Nature in Computer Use"]

[Text] The Computer Technology Special Department of the NJSZT [Janos Neumann Society of Computer Technology] and the Leadership Special Department of the Computer Center held a joint roundtable conference on 20 November 1980 with the title "The Economic Effects of the Functioning of Computer Technology Enterprises."

After introductory words by Tibor Szentivanyi the participants heard statements by Tibor Hunfalvy, director of the ELGAV [expansion unknown], and Dr Endre Hujber, a leading colleague of the SZAMOK [Computer Technology Training Center], on tape from a report prepared by Zsuzsa Vajda for the Hungarian Radio in June 1980. Tibor Hunfalvy said that amortization did not cover the acquisition of newer and more expensive equipment and thus the computer centers must make use of state aid. The provision for a uniform 20 percent reduction in force (which was not differentiated) had a worse effect on institutions which had been working with a narrower personnel allotment than it had on those which did not strive to tighten up personnel management in the preceding period. The organizational institutes were having to give up workers with whom they would have been able to carry out the developmental tasks of the future. Dr Endre Hujber called attention to the problems of quantitative evaluation and accounting as a factor running counter to the striving for quality.

Sandor Perjes was the first to express his views about what he had heard: We do not have today methods which could be introduced to replace quantitative measurements. Under present market conditions the user is at the mercy of the processor. The new price system to be introduced in January 1981 will be a better guide than the system thus far; it contains guide prices for the most frequent types of service.

In his comment Karoly Pogany noted that a distinction must be made between organization and computer technology. They should not be mixed together because organization is only one use area of computer technology. Distinctions must also be made among use areas. It is characteristic of most of them that the important consideration is more economic use but this cannot be applied to certain areas (for example medical applications). He called attention to the fact that in our homeland professional organizational bases have not developed along with the professional computer technology bases. We must manage more efficiently with the hardware in the country,

worth about 20 billion forints. The computerization of our homeland was done with state money, but a material base for replacement must be created. He said that in contrast to practice thus far computer technology is not primarily a service, and it would be good to study this fact. It is a domestic phenomenon that in many cases our organizational institutes are too large. The regulations indirectly hinder interest in the quality of organizational work in that despite some attempts it is not possible to sign profit sharing contracts with the users because the state withdraws as unjust profit the extra profit deriving from such contracts.

Gyorgy Robert said that the results of a five year study at the Revenue Directorate of the Ministry of Finance show that the responsibility of the users for the effectiveness of a system is at least as great (if not greater) than that of the organizational institute which did the work. Most of the clients do not have a clear conception. They order computer processing because they are forced to at a higher level or because it is fashionable. But they neglect the basic organization of the enterprise before placing an order and expect the computerized organization to solve work organization and other enterprise tasks. But the organizational institute is not capable of this. The work of the organizational institute influences the profit of the institute because it depends on other factors (for example machine hours used). The studies show that the systems introduced have not been thought through. The enterprises have not developed receptivity and so there are few really good solutions.

Dr Aurel Hajto emphasized the necessity of joint responsibility and appropriate management of the tools. The two contracting parties (the user and the jobwork office) are linked by the price. The user has no way to demonstrate what advantages he derives from use of the computer. They always ask about the effect on reducing personnel. Although there is an increase in personnel around the computer, as a result of computerization, over several years, as a result of suitable processing, the production of the computerized area increases and the number of people employed in production decreases. By the time these results appear no one is demanding an account any longer. The economical operation of an organizational enterprise is measured via the current regulator system to see if the activity is profitable or not; and no economic unit can escape this. At present, if more machine hours are used and more output is produced then more can be collected. If less machine time is used thanks to more efficient organization of the jobwork enterprise it is detrimental to the processing enterprise. Accounting should start from resource funds and not from machine hour fees. The market should determine the price and the processors should share in the profit from better solutions.

Peter Braun said that one can only rarely measure in figures the profitability of computer technology. In a large number of cases the effect is expressed in an improvement in the level of management and quality of products, which is as difficult to quantify as, for example, the effectiveness of higher education. He said that there is a time lag between the development of modern technical tools and the evaluation of economicalness. A new tool must be used even without a proven economic profit! In addition he said that if a user wants to use someone else to provide the service, as compared to earlier, then the costs to the user will include a very

significant special cost which he called the "escape cost." This keeps the user from making a change even if he is not entirely satisfied with the quality or the price. The fact that a significant part of the sales receipts for computer encourages both the user and those providing the service to acquire computers. He judged as incorrect the accounting practice based on machine hour fees and considered correct an accounting based on the actual use of resources.

Dr Elde Schusster went into some detail about how we do not have a system of economic measurement with which the level of organizational work could be evaluated. Suitable user oriented computer technology training has not been provided for some 300,000 people working in various leading posts. In doing organizational work there should be an attempt to make use cheaper every year in every area.

Dr Zoltan Murayni expressed the opinion that the market which has developed is an influenced one and services have not developed in accordance with value relationships.

Dr Endre Hujber said that what he had said in the June radio statement about quantitative accounting and judgment had touched a sensitive point of our computer technology life. Business interests also influence the level of western organizational work, cited in one of the comments as an example. The organizational firms try to offer a standard solution and they try to do what they are asked to do with as little as possible. They do not do more or better than this because it is not in their interest. But these countries have a sort of institution which we lack, the consulting office, which the user, lacking expertise, can ask to formulate the expectations in regard to the organizational form and to take over the work from it, in regard to quality control, in the name of the user. This practice should be used here also.

In his closing words Tibor Szentivanyi judged the debate to have been very lively and useful. He thanked Hungarian Radio and the invited speakers for their cooperation. He expressed the hope that it would be possible for everyone interested to become acquainted with the content of the conference from the radio, via a program prepared from the debate.

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BUDAPEST-MOSCOW ON-LINE DATA BASE QUERYING

Budapest SZAMITASTECHNIKA in Hungarian Jan 81 p 4

[Article by Andras Grotte: "On-line Data Base Querying Between Moscow and Budapest"]

[Text] We wrote earlier (SZAMITASTECHNIKA Oct 79 p 7) about the International Scientific and Technical Information Center (NTMIK)--which is the common technical information base of the CEMA countries--and about its activities and the information systems created by it. At that time the data base could be accessed operationally only from the central building. More distant demonstration data links were established only temporarily; thus the article cited reported on the link set up at the ESZR [Uniform Computer Technology System] anniversary exhibit in 1979. Since then accessing the system from the Moscow region and the immediate environs has become an everyday practice. The hardware bases for this are the AP-64 terminals manufactured by ORION and installed in a number of research institutes and universities. For example, the Kurchatov Nuclear Energetics Institute, the MIFI and the Moscow Engineering Physics Institute maintain a permanent link with the data base of the center.

Taking into consideration the Moscow experiences--and in coordination with the OMFB [National Technical Development Committee]--a cooperation contract was signed between the NTMIK and the domestic base organ for technical information and documentation, the National Technical Library and Documentation Center (OMKDK). Within the framework of this it was decided to set up a joint demonstration in Budapest--partly to test the possibilities of data transmission over long distances and of on-line querying and partly to acquaint Hungarian experts, the employees of libraries, information institutes, etc., with the work and services of the NTMIK and with those advantages which computerized data bases represent in scientific-technical information work.

To provide a technical background for the demonstration the ORION factory was asked to make available an AP-64 terminal with three ADP-1001 picture tube units and a Robotron 1156 matrix printer as well as an AM 1200 modem with a transmission speed of 600/1200 baud. In addition it had its experts participate in installing the equipment, setting up the link and conducting the demonstration from the technical side.

The OMKDK did the organizational work in connection with the demonstration, to set up the link and obtain postal cooperation. In the course of this it was decided, for material reasons, not to use a leased line for transmission but rather to use

to use the linked network. The technical possibility of using the linked network still had to be studied however. The OMFB had oversight over the organizational work all the way.

In the first phase of the work the terminal was put into operation at the ORION factory site. The data link was set up on the linked telephone network on a daily basis and contact was established with the computer. The tests showed that the increased number of errors with a speed of 1200 baud did not make possible reliable transmission of the data. There was an average of one erroneous transmission for every 80-100 characters transmitted. Since the terminal uses a "message-repeat error-protection procedure" this caused constant repeats, causing holdups at the computer end. At a speed of 600 constant repeats, there was one repeat for about every 5-10 picture tube frames transmitted (the picture tube accommodates 960 characters). This is acceptable, considering the distance. Unfortunately, as a result of the brief machine time available, it was not possible to analyze with detailed measurements why transmission was not successful at a speed of 1200 baud. For the time being we are satisfied with the fact that 600 baud makes possible a stable and reliable link. In the second phase of the work the terminal was relocated to the building of the OMKDK. The Moscow colleagues of the NTMIK then joined the work since they knew how to handle the data base and the operations needed for querying. The demonstration of 3-5 November 1980 came in the third phase. Here we operated the configuration shown in the photograph; the AP-64 terminal in Budapest had three picture tubes and one matrix printer; in Moscow the ESZ 1040 computer of the NTMIK worked with an OS/ESZ 4.1 operational system and a BTAM remote access program.

We also operated a so-called KAMA remote data processing monitor. The monitor has functions similar to the IBM CICS. The data base could be accessed via a DIALOG program. (This is a text handling program similar to the IBM STAIRS program). The data link to the computer was realized via an MPD-3 multiplexor and an ORION AM-1200 modem. The system is capable of handling 16 different data bases simultaneously. This is limited not by the software but rather by the present configuration of the hardware.

In the demonstration information could be queried from three data bases. These data bases contain bibliographic data and short substantive summaries in appropriate themes and data on professional books and articles appearing in a given period. Querying can be in the Russian, English or German language. The data bases used were: the INIS (a data base compiled by the International Nuclear Information System), the NTMIK (research and development reports and dissertations of the CEMA member countries) and the VINITI (of which it was possible to access the chapters on automatics and radio electronics).

Those attending the first day of the demonstration included Dr Laszlo Papp, deputy chairman of the OMFB, a number of workers from the OMFB, the leaders of the OMKDK, a postal representative, and the director and scientific department chief of the Soviet Science and Culture House. Workers from leading libraries, information institutes, the Central Statistics Office, the National Planning Office, the ministries, the Hungarian Academy of Sciences, the National Council of Trade Unions and several

educational institutions and research institutes participated in the demonstration on following days. After the daily program the workers of the OMKDK became acquainted with the possibilities of the system.

For the entire time of the demonstration transmission took place at a speed of 600 baud with satisfactory quality. It was shown unambiguously that the quality and reliability of the linked telephone network can provide an on-line data link even at this distance. The AP-64 terminal used makes possible convenient and flexible access to the data base.

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THIRD GENERATION MICROWAVE SYSTEMS

Budapest MUSZAKI ELET in Hungarian 20 Mar 81 p 8

[Text] We asked Dr Miklos Herpy, main department head of the Telecommunications Research Institute [TAKI], and Mihaly Varadi Szabo, scientific department head, how they would characterize research and development work begun 5 years ago on third generation microwave systems. The results of this work have received recognition both at home and abroad.

"Our institute wished to develop an analog microwave system using new technology and incorporating a uniform construction principle back in 1975 so that we could establish the basis for modern production in the 80's. In the past, microwave circuits were made of wave guides. We replaced these with third generation microwave circuits in which the wave propagates along microstrips deposited on ceramic or special plastic surfaces.

"We began by developing the technology for designing and fabricating such microstrip circuits. We established a layer processing laboratory in which thin-film circuits on ceramic substrate and microstrip circuits on plastic could be fabricated. The thin-film knowhow was purchased from the Telecommunications Industrial Research Institute [HIKI]. We evolved methods for designing microstrip circuits. Today the institute has computer programs with the aid of which the most diverse microstrip circuits can easily be designed, and the necessary masks can be made with drafting machines.

On this basis, we began working out high-capacity microwave transmitters and receivers which used semiconductors exclusively. Of the new devices developed, the final amplifiers of transmitters operating on various frequency bands but having uniform construction are particularly significant. These are capable of amplifying microwave signals in the 4 - 8 GHz frequency band from a level of a few milliwatts to a level of a few watts. However, since microwave semiconductors in this band cannot be handled uniformly, we solved amplification in the 2 GHz intermediate frequency. Using frequency halving, thirding or quartering, we break down incoming 4 - 8 GHz signals to 2 GHz, then retranspose them to the original frequency range with frequency multipliers after they have been amplified. Consequently, we use relatively cheaply obtainable 2 GHz microwave semiconductors, and since these final amplifiers are built up of microstrip circuits, they can be made relatively small.

"To improve reliability, we make extensive use of monolithic integrated circuits. By exploiting the advantages of digital integrated circuits, we tried to realize

many circuitry functions digitally which had previously been solved in the analog mode. Thus we used methods of frequency synthesization in the locale oscillators which produce transmitting frequencies. This made it possible to program the transmitting frequencies. This is important primarily in postal operation and from the viewpoint of a minimal number of reserve units. "So far in our research and development we have developed three sets of the line of equipment operating at 4 - 6 - 7 - 8 frequency bands. Because of its modular construction, each unit can be assembled from an assortment of uniform circuits and parts. The basic dimensions of the construction meet postal requirements.

"We gave the prototype of the 7 and 8 GHz, KTT-80 model of installations which has a 960 telephone channel capacity to the ORION factory which has begun preparations for production in series. Documentation of the 6 GHz, GTT-80 model Precision Mechanics Enterprise [Finomechanikai Vallalat] so that they can prepare the prototype.

"After this, TAKI will develop equipment needed for operating 4 GHz trunk network systems and microwave equipment. Thus an analog system of modern construction suitable for building up medium and high-capacity connections will be created. At the same time the research will form the basis for evolving analogue and digital communications equipment of smaller capacity."

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WORK OF VETERINARY SERVICE: EDUCATION, PRACTICE, MEDICATION EVALUATED

Budapest MAGYAR ALLATORVOSOK LAPJA in Hungarian Vol 36 No 1, Jan 81 pp 3-7

[Article by Dr Lajos Denes, deputy minister of agriculture and food supply:
"Honorably, With Discipline and Trust"]

[Text] Every new year is a time of reckoning, a time of accounting for the past and planning for the future. Not only because no 2 years are identical but also because reckoning can extend to several years in the past and in the future if it is felt necessary. On the threshold of 1981, we can not only look back to an accomplished 5 year plan, but a rather prolonged management practice has also ended. In the future, animal health activities will have to be organized according to new, very high level legal provisions while the management conditions will be undergoing considerable changes. Therefore, it is reasonable to subject our past and present activities to a thorough evaluation and to confirm the main principles of our activities which will also be valid in the future. Thus we do not want merely to say goodbye to a year past and to greet a new one. Let us look a little farther back and plan a little farther ahead.

In looking back at the national economy as a whole, first of all we can conclude that the extensive possibilities of building socialism in our country were exhausted during the 1970's. With all its successes and occasional weaknesses, the Fifth Five-Year Plan now concluded has already provided a few years of experiences with new attitudes and practices. The importance of local initiatives has increased. In performing work, there is increasingly less need for masses; rather, quality requires better organized and more disciplined work and, in many places, fewer employees. The work force which had proved to be inefficient is now being redirected by the new conditions toward work places engaged in direct production. Because of the increased production demands and of the more unfavorable economic background, the work conditions have temporarily become unusually difficult especially in places where work has lost its true content and value because of various causes. A further increase in the standard of living can rest only on the distribution of values produced by effective and economical work. Society's earlier emergency resources, which had served to raise living standards have been exhausted. In the interest of economic management and societal balance, from now on we can distribute only what we newly produce. The individual is ever faster attaining the position where he can perceive the value of the work he performs. Compared to the earlier system, the responsibility of the leaders is also incredibly enhanced by these factors both at the national and local levels of management.

The just completed Fifth Five-Year Plan was the first intermediate range planning period during which we had to work under conditions of a permanently projected global energy crisis. Almost without transition, all of humanity was forced into a new set of conditions by the rapid exhaustion of natural energy sources and gradually decreasing amounts of inorganic raw material reserves. The known scarcity of domestic energy, the scarcity of raw materials in the broader sense and the rising world market prices of these materials--which have already started and never ceasing--necessitated the reevaluation of our entire management strategy. We must manufacture products sought after and well paid for by the world market, and which have low production costs as compared to their sale price. It is not an easy task to convert our economic management to these new demands and, while it requires time, this should essentially be accomplished during the Sixth Five Year Plan starting now.

Concerning the work by members of the animal health services and by veterinarians, of course, this cannot be independent from the economic management which they also helped form within their sphere and possibilities, and which greatly influenced their working circumstances and often also their accomplishments.

By the end of the 1970's, the institutional system of animal health services became firmly established. Modern material requisites for the work were obtained, investments were essentially completed, working conditions were improved especially at institutional work places. However, because of a lack of opportunities, the provision of certain conditions badly needed for the work of practicing veterinaries still remains unsolved.

In past years, the animal health services have collectively fulfilled their duties. Through their services, veterinaries and institutions have established hygienic safety of production for such a long time as to be unparalleled in earlier decades. Our institutions which are only in indirect contact with production have also provided efficient work. However, I think that in evaluating such an extended period, the general observations can usefully be extended to examine and evaluate in somewhat greater detail the work of our institutions. Public evaluation will also enable individuals to compare their own observations with it and will help them to formulate their opinions eventually. It will also help managers and workers of the institutions noted to place their institution in relation to the others not only on the basis of their own individual conceptions.

Among the institutions of the animal health services, the institute of veterinary Vaccine Control has been conducting disciplined, high-standard work without interruption ever since its establishment and, therefore, also during the past 10 years. The services could always rely with the greatest confidence on its evaluations. This was needed because of considerable vaccine imports and the prolonged, uneven quality standards in vaccine production maintained by Phylaxia. Demanding, disciplined work has been and will remain a natural characteristic of the institute.

Its veterinary staff is characterized by a special stability which is especially commendable if we consider their working conditions which until now were considerably below average. This stability made it possible to promote veterinaries to the leading positions of the institute based essentially on individual abilities alone, and even the highest positions have been filled by insiders. The working atmosphere is exemplary at the institute. Individuals and their work are

appreciated and supported. Undying merits go to the founder-director, Dr Erzsébet Simonyi, for developing this spirit and to her successor, Dr György Kucséra-- who, unfortunately, retired recently--for maintaining it. We expect that the present director, leaders and, of course, all collaborators of the institute will uphold the existing high standards. In addition to the personal support from leaders of the animal health services, the favorable working conditions in the recently completed, new central laboratory building will further facilitate this.

An institution performing one of the most sensitive control functions, the Food Industrial Hygienic Control Service of the Hungarian Ministry of the Food Industry, has achieved considerable progress in its work. The veterinary function which not too long ago had merely been tolerated in slaughterhouses out of necessity, and had been considered only peripheral in the profession, has achieved a true standing. Both objective and subjective factors have played a role. From the objective side, the main factor was the hygienic standard for exported food products demanded by the international market which earlier had been less stringently enforced. From the subjective side, the regulations by the ministerial leadership aimed to reinforce the importance of this service, on the one hand, and the favorable renewal of leading personnel in the service, on the other hand, have facilitated this advancement. Food hygienic work is beginning to receive its due place both in veterinary practice and in the managerial calculations of food producing and processing plants. However, this advancement can be made lasting only by professional steadiness requiring great perseverance and by breaking through the lack of understanding still present in the managerial view of many plants. The staff of the service has become consolidated and is performing work of definitely high standard especially in the plants already qualified for exporting.

Further elevation of the ranking of this service depends above all on the service itself. Its leaders have very favorable professional abilities and human endowments, and their work capacity is exceptional. Based on these, it appears not too demanding to expect that the less exposed branches of this service will also progress in circumspect and planned professional development, and will make serious advances in the training of their managers in matters of the proper attitude. Also in the future, the service can count on continued critical attention and on effective support from the ministerial leadership.

In the 1970's, the National Institute of Veterinary Medicine has travelled a controversial course. In my opinion, this was due exclusively to personnel causes.

Throughout nearly its entire existence, the professional standing of the institute has been derived from its intellectual strength rather than its technical preparedness. This is quite natural. With passing years, the most outstanding specialists have become overaged and both the "great old ones" themselves and--a very deplorable situation--the leaders of the institute neglected to take timely steps to replace them with suitable candidates. Therefore, with few exceptions, colleagues who have not yet been adequately prepared were named as heads of the individual departments. Experiences of the past few years also force me to state that the simultaneous appointment of my former chief, Dr Tibor Kadar--whom I continue to respect and hold in great esteem--as chief department head of the ministry and director of the institute could, out of necessity, be realized only to the detriment of one of the supervised areas, in this case the institute. Even the best sounding name was unable to replace the whole man needed to do the job of the leader. We must not forget this lesson. In this situation, it followed almost unavoidably that, when the time came, Dr Kadar did not have an

adequate chance to make a good selection of his own successor at the institute. This had an unfavorable effect on the later activities of the institute.

The strong, heterogeneous abilities of the institutional leadership, their divergent professional and administrative training which, in some of them is--unfortunately--of lower standard than needed, had a poor effect on both, life and work within the institute, and on the consequences and quality of contact with everyday practice. Because of such causes there was danger that the institute will become unable to fulfill its tasks. Finally, a change of directors came about under such conditions and, during the relatively brief period since, there have been several promising changes in personnel and philosophy. It appears that the new leadership has started on the right road, there has been a great improvement in morale and, following the recent completion of investments--which had undoubtedly caused many problems to the earlier management--the most up-to-date and outstanding working conditions were provided for the institute.

To proceed in the direction already taken, its leaders and professionals--younger not only in their thinking but also in years--can continue to count on the necessary support from all levels of the animal health services. However, everyone at the institute is individually honor-bound to attain and enhance the knowledge needed for the expected high professional standards.

Without underestimating their importance, I shall give a summary evaluation of the work of provincial animal health institutes--to the extent that this is possible.

Modernization of our institutes has been completed, working conditions are good in this respect. It is justifiably expected from every institute to further raise its professional standards. Among their personnel, there are numerous excellent professionals many of whom are also young. This is reassuring and promising. The abilities and achievements of those in leading positions are, of course, diverse. The most important task is a planned, relaxed, well-considered training of administrative successors which is quite possible during the available time.

The Economic Center of Veterinary Stations is a special institution of the animal health services with the smallest staff. In accordance with its calling, it employs a small group of professionals well versed in monetary management whose often unpopular decisions--derived from their type of work--nevertheless serve the good of veterinary work. Since its establishment, the center has commendably fulfilled its tasks. By having taken care of the investments in 20 stations and by organizing expansion, they have laid the foundation and have been continually providing high standards of material conditions for the work in the stations.

The age of veterinary stations in the megye-s (and in Budapest) hardly exceeds the timespan of the past decade. Their total activities can be judged favorably. The work of professionals in the individual stations is routinely evaluated in terms of the animal health status of the agricultural units they oversee and also in terms of the fulfillment of uniform national tasks. Because the success of animal health organization is also a function of the national discipline of those engaged in directing the operations, the station administrators at the megye and jaras level have an outstanding role and responsibility.

In past years, a considerable of megye (jaras) administrators has been replaced and has become younger. Part of the replacements were age related, others were caused by higher demands set for administrative work. The decisive majority of the current administrative pool is performing its work according to expectations. On my part, I value it greatly that most of them do not do it in response to the "prevailing winds". Rather, the expected administrative approach corresponds to their own administrative conceptions, methods and ethical views.

A brief summary of the work of the veterinary network in food processing plants, during the years past, also belongs in these evaluations.

In the early 1970's, the about 350 veterinarians employed on state farms represented the majority of enterprise veterinarians. The veterinarian network on farm cooperatives, started at that time and increased its development rate in the mid-seventies, so it has over 700 personnel today, and the total number of enterprise veterinarians is nearly 1100. Today, more than half of the practicing veterinarians are employed in enterprise.

Evaluating their work, it must first be emphasized that the professional, administrative and economic advancement of cooperative farms was a prerequisite to the strengthening and more widespread employment of veterinarians. The stabilization of enterprise veterinarians could come only after the consolidation of the enterprises. Almost exclusively, only the weak cooperative farms loose their veterinarians sooner than usual, or the enterprise may terminate the employment of a veterinarian who has been unsatisfactory for some reason. Of course, compromises on both sides are also often a factor in this stability.

The animal health stations have a useful role in the professional cooperation of enterprise veterinarians. Their help reinforces an indispensable professional unity which can no longer be seriously disrupted by the few veterinarians who tend to isolate themselves or by an enterprise management turned inward. These can be found almost everywhere.

The rather general and more and more unequivocally favorable experiences during past years can be comforting to us. Additional advancement can be expected through the development of still rather weak enterprises.

The animal health stations have an additionally important role in the manifold professional collaboration of enterprise veterinarians, in organizing their activities and advancing their professional representation. The most important among them is that the animal health stations must become the organizational background for enterprise veterinarians.

The particularly great importance of enterprise veterinarian activity, whose achievements and work experiences cannot, of course, be reflected by this publication. Therefore, a way must be found to analyze this activity later, in an independent evaluation.

The work carried out at the Veterinary Medical University is particularly important to the animal health services. Of course, as an educational institution, the university is not formally a part of the animal health services. However, it has a very significant effect on veterinary practice because of the training it provides and because of certain scientific research results. Therefore, the work and life of the university has always been a subject of great interest among veterinarians.

The investments aimed to renew the curriculum of the university have essentially been completed in the past few years. The working conditions have been improved in the majority of its departments. The teaching faculty is characterized by a relative stability with all its favorable and unfavorable effects.

Because the life of the university and the standards of educational-training activities are determined by the teaching faculty, I should like to mention a few relevant observations.

First, I want to note with respect and appreciation those honest efforts aimed at maintaining the international and domestic reputation of the university which were achieved through the activities of its world-reknowned classicists. No one can be blamed because--in spite of this--we do not as yet have a new Hutyrá or Marek. At the level veterinary science has reached, after a singularly illustrious epoch of Hungarian veterinary science, such demand would not even be realistic. Let me also voice my personal opinion that, especially in our international relationships, the regular references limited to our great classicists are sometimes oppressive since not one of the nations of this world could be measured by a standard which would make their veterinary sciences compete with that of Hutyrá--on a modern scale. We must aim at giving an equal chance to our educators and researchers in order to make their scientific development and advancement dependent only on their individual abilities. A scientific life based on such a principle and practice promises a greater possibility for the timely birth of another golden age than the present situation.

With respect to the stability of the teaching staff, one characteristic should be noted: age distribution. In the course of such examination, the first thing that becomes apparent is the frighteningly high average age of associate professors, the most important pool for replacement in higher faculty positions. By the end of 1980, their average age had reached 46 years. Considering the current average age of 56 for professors--which is actually quite good--and the average age of docents at 50 years, it is obvious that--in principle--the adjunct professors are the main pool for staff development. However, if the average age of associate professors is 46 years today, this same pool would be too old by the time their promotion--of course, only for part of them--could be realized. Therefore, in addition to the assistant professors, a periodical, extensive staff turnover, based on broad evaluations, would be necessary especially among the associate professors. This would also have a refreshing effect on the practical side of training. The numerous difficulties associated with executing a massive staff exchange are well known to me. Therefore, I am especially disapproving of the delay in those exchanges which the university could bring about on its own. Opportunities for this are not negligible!

I wish to express briefly my opinion on the rotation situation of university functionaries.

The leaders of universities, rector and deputy rector, are appointed for three year terms. The appointments are recommended by the university council to the responsible state offices where the decisions are made. Naturally, such recommendations are preceded by rather broadly based information collection and agreement of opinions. A healthy academic life requires that rotations should be regular and that a given individual should not hold leading positions for longer than the reasonable term.

Looking at the last few years of our academic life, I must regretfully conclude that rotation of the leadership--which would also take care of faculty turnover--has not materialized at the desirable time intervals. This has become an excessive burden to those in leading positions and--contrary to our intentions--it has also harmed the healthy development of academic life. This lesson was learned at the ministry. At the same time, we wish to urge the University Council to use its power more forcefully to renew the leadership.

In past years, the Veterinary Medical University--by its activities as a whole--has provided valuable help to the work of animal health services. Its departments have contributed not only useful theoretical information but also much practical advice to solving practical problems. Nevertheless, the inner life of the university is not without problems. The various measures of educational "reforms" so far have caused almost more damage than improvement. In response to these, for instance, the number of hours spent on the most important veterinary specialties has become so small as to endanger teaching effectiveness and training standards. The sharp decrease in the number of hours spent on important basic subjects is also outright harmful. Nor do I consider a lucky choice the current form and content of the comprehensive state examination. Shortening the time of formal schooling has made the situation of 5th year students even more difficult. The problems cited have mainly arisen as a result of central directives but the local chances of reducing their influence were by no means exploited by the university. The necessary and possible corrections must be made jointly, as soon as possible.

Our university enjoys a privileged role among our veterinary institutions. But no one should misunderstand these privileges. It can count on praise after a job well done just as on criticism in the case of inadequacies. In this respect there is only one measure. It is a justified expectation that the prevailing leadership of the university accept that it is unrealistic to always laud the work performed. It is not necessarily good for the university to be courted left and right. It should be respected and liked, but this cannot be sincere without criticism. The university can find its privileged standing mostly by the increased attention with which we follow its life and activities, knowing its weighty importance. This can only be to its advantage in good and bad. Every work place, including our university, consists of a large majority of honest, conscientious, valuable people who consider the good of society first. All of us, whose honored duty it is, will try to be of use to this majority in the public interest.

Finally, I wish to evaluate briefly the work of the Phylaxia Vaccine and Nutrient Producing Company. Among its tasks, I shall only mention vaccine production. Because of earlier, long years of serious errors, the past few years were a period without success in vaccine production. Irresponsible company management and an incomprehensible liberalism in management also led this section of the company to a lowpoint. The backward production technology has gradually been "joined" by a lack of modern knowledge. Regretfully, it can be said with hardly any overstatement that the status of vaccine production is incompatible with the rank of Hungarian veterinary health services. However, we understand the situation of all of our colleagues, and value their good intentions, who are willing even under these conditions to accept work and responsibility at Phylaxia. We will use all available means to help them from being alone in their efforts and for them to succeed in the end.

Surveying the results of the past few years we can conclude that our animal health institutions have travelled a variable road. On this road, many of our esteemed colleagues and coworkers were permanently left behind. Their life's work and their name will be remembered with great respect. During these years, many of our colleagues reached the limit of their productive careers and have begun the third period of their lives, hopefully of long duration. We thank them for their work which was not in vain. We wish that they should enjoy its results for a long time, in peace and happiness.

With the advent of 1981, new, great tasks await the Hungarian animal health services. The work of the new, already the Sixth Five-Year Plan is beginning. It is a 5 year plan which can be realized in its entirety under difficult conditions. Establishing national economic balance and its subsequent stabilization is the main task of this 5 year plan. The economic situation will permit only the most necessary investments, and import possibilities will indeed be limited to ones truly indispensable products and goods which could not be obtained through any other means.

Intelligent thrift must not be a slogan only but a useful practice. By thinking, the intellect can, of course, not replace everything. However, it can greatly contribute to the elaboration and application of new, thrifty procedures.

The production conditions for animal raising will not improve in comparison to the previous 5 year plan. At the same time, the production plans anticipate considerable advancement. Every energy source will be more difficult to obtain. Therefore, energy saving will have added importance. Wherever the species and class of breeding animals permit, natural means of animal raising will be greatly expanded. The importance of byproducts, auxiliary feeds will be increased. Compared to previous years, feed utilization will further increase in importance. The mortality number of animals must be further decreased. However, the goal is not to keep them alive at any cost!

The domestic animal stocks must be protected from epidemic diseases. Therefore, protection of the stocks against epidemics must be further increased. Domestic vaccine production must be improved and expanded, and resistance must be essentially achieved. Diagnostic procedures must be made more rapid, reliable and more broadly used. The importance of every economical procedure aimed at preventing damages will increase.

The exporting of raw and processed animal products must be increased both in quantity and selection. Active efforts are needed to help additional food industry enterprises to meet hygienic requirements of exports.

In coming years, human work and thinking will have especially great importance. Our truly great reserves are in them. In order to draw as much as possible from these reserves, further improvement in mutual understanding is needed in human relationships.

Honesty is one of the pillars of such a relationship. This human trait is an indispensable part of truthful, societal life. We expect honesty from all our coworkers and especially from the leaders. We ourselves will live honestly. Since we know well that honesty cannot be learned, we also have to accept that there will always be a small number of dishonest, selfish people among us. To keep them from doing much damage, let us not allow them to attain leading positions.

The increasingly difficult conditions require more discipline at work. The basic task of veterinarians includes either direct or indirect production guidance at every place of work. They should always be disciplined in their work and should also demand discipline from others. Discipline can be taught and, therefore, it can be expected from everyone.

Every man is capable of truly liberated work only if he is surrounded by trust. Let us provide everyone with trust in his work. Let us advance this trust also to those whom we do not yet know adequately. It is characteristic of a decisive majority of people that they can well utilize the possibilities provided by trust. If we were to trust only ourselves, we would be alone.

Let us start the coming years together, for each other, for our future--with honesty, discipline and trust!

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PATHOMECHANISM OF SUBACUTE MYOPATHIA CAUSED BY ORGANIC PHOSPHATE ESTERS

Budapest IDEGGYOGYASZATI SZEMLE in Hungarian Vol 34 No 1, Jan 81 pp 1-9

KARCSU, Sarolta, Dr, TOTH, Lajos, Dr, POBERAI, Maria, Dr, SAVAY, Gyula, Dr;
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[Abstract] The possible relationship between acetylcholinesterase inhibition, Ca^{2+} liberation and increased protease activity, and the pathogenesis of subacute myopathy was studied on rat diaphragm following a single i.p. injection of diisopropyl fluorophosphate (DFP), an irreversible cholin esterase inhibitor. Light - and electronmicroscopic histochemical methods were employed. In the controls, the motor endplates showed intensive AChE activity. In the areas of neuromuscular junction, no ionic Ca or neutral protease activity were found. Thirty minutes after a single i.p. injection of DL_{50} DFP, there was a considerable inhibition of AChE activity in the motor endplates. The degree of inhibition was quite variable in different endplates. This was accompanied by the release of Ca^{2+} which reached its peak 4 hours after the injection. An increased neutral protease activity in the striated muscle was demonstrated 1-2 hours after the injection, reaching peak activity after 4-12 hours. A chronological and causal relationship was found between the development of histochemical changes and of ultrastructural signs of the myopathy. References 39: 6 Hungarian, 33 Western

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PROGRAM SYSTEM FOR THE AUTOMATIC GENERATION OF ELECTRIC CIRCUIT DIAGRAMS

Budapest MERES ES AUTOMATIKA in Hungarian Vol 28 No 11, 80 pp 413-418
manuscript received 15 Feb 80

CSERNO, Janos; PETROVICS, Istvan, and Mrs VARADI, Tibor, SZKI

[Computer Technology Coordination Institute]

[Abstract] The KRT2 program system described in this article is part of the KENTAUR system developed for complex unified designing of electronic devices. The KRT2 generates electric circuit diagrams conforming to the provisions of Hungarian Standard MSZ 9200/33-73. The result of the generation is magnetic tape which controls a drafting machine (such as that made by Ferranti) or a microfilm plotter. This equipment in turn prepares the actual drawing with India ink or on microfilm. The KRT2 uses the same data base as the program which design the printed circuit board and other documentation, contains relatively few restrictions, operates within a shared operating system, and can be also run from the terminal via a data-transmission line. The program system consists of three programs: documentation design, postprocessing, and data-carrier conversion. The hardware is a Siemens 7755 computer (BS-2000 time-sharing operating system); the programming languages used are FORTRAN and ASSEMBLER. Dynamic block handling is employed for data handling. So far, approximately 180 diagrams were prepared for 150 mm by 300 mm cards. Depending on the complexity of the diagram, generation takes 500 to 800 seconds of processor time; it takes 40 to 50 minutes to obtain an India-ink drawing with a FERRANTI EP-230 drafting machine. The program separates the diagram into pages, arranges the connections on the individual pages, provides cross references among the pages, and optimizes the circuit. Figures 7, references 10: 6 Hungarian and 4 Western.

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BRIEFS

ANTARCTIC BIOMASS-FIBE PROGRAM--The Gdynia Sea Fisheries Institute's research vessel set sail for the Antarctic on 12th January 1981. On board was a group of scientists from the S.F.I. and 32-man group of biologists from the Polish Academy of Sciences P.A.S., which is financing the expedition together with the Sea Fisheries Institute. The expedition was organized under the international research program BIOMASS-FIBE (Biological Investigations of Marine Antarctic Systems and Stocks--First Biomass Experiment). One of the important tasks of the experiment is to determine the abundance of Antarctic krill stocks and micro-organisms on which they feed. On behalf of the Polish Academy of Sciences, the scientific leader of the expedition is Dr. Stanislaw Rakusa-Suszczewski--head of the Polar Investigations Department of the P.A.S. Institute of Ecology in Warsaw, and his deputy is Dr. Piotr Bykowski--head of the Gdynia Sea Fisheries Institute's Department of Fish Processing Technology. The scientists from the Profesor Siedlecki will conduct surveys on the Scotia and Weddel Seas, also around the Antarctic Peninsula, from 1st February to 10th March. On completion of this programme, the P.A.S. scientists will disembark on King George Island and make their way to the Henryk Arctowski Polish Antarctic Station. The Profesor Siedlecki will carry on investigating stocks, mainly in the Scotia Sea, until mid-May, her return home foreseen in June 1981. [Text] [Gdynia POLISH MARITIME NEWS in English No 2, Feb 81 p 20]

CSO: 20 20

ACCIDENT PREVENTION THROUGH COMPUTERIZED BIORHYTHM ANALYSIS

Bucharest ROMANIA LIBERA in Romanian 2 Mar 81 pp 1,3

[Article by Viorel Chiurtu]

[Text] At the main gate, where the thousands of workers of the Galati Metallurgical Combine enter and exit daily, in the stream of people who are heading home, a dialog between two workers catches my attention. "I am off tomorrow." "Why?" "I have the day off...." "Who gave you the day off?" "The computer."

I tried to obtain details on the workers' day off from the computer from I. Stolniceanu, the party committee secretary for economic affairs.

He said: If you need details you can obtain them from the department for labor safety. You will learn about all the "secret" on the days off for workers, which, starting this year, at the Galati Metallurgical Combine, are no longer set by foremen and section heads but by the computer.

We asked Engr Gheorghe Moraru, the head of the labor safety department: It seems to us that in your activity you now have a very demanding and accurately in accident prevention: the computer.

He answered: Exactly. However, it is not the computer alone but the biorhythm theory as well. With the assistance of researchers at the specialized institute, we have moved here, at Galati, for the first time in the metallurgical industry in Romania, not only to testing, but from the beginning of this year to broadly using in production this modern method of preventing labor accidents and equipment breakdown on the basis of estimating the workers' biorhythms.

Here are a few absolutely necessary clarifications for our readers. In the first place, the notion of biorhythm is related to a cyclicity in the human body which involves three major cycles pertaining to the physical, emotional and mental traits of each person. Each cycle has a specific duration: the one that involves the physical traits, 23 days; the emotional ones, 28 days; and the mental ones, 33 days. Their cyclicity depends on the day, month and year of birth of each person.

Estimation of the variations in these cycles -- Engr Moraru went on to say -- actually is the principal factor in assessing the physical, emotional and mental capability of each individual at one point and also determining with mathematical precision the so-called "critical days," days when the human body experiences specific disruptions which diminish its capacity. On these days, the person is not capable of performing a number of operations.

[Question] This means that based on this theory you "guess" the day when a worker does not feel well let us say physically.

[Answer] Somewhat like this. With the only difference that when applying this theory to the biographical data of each worker it is not a matter of "guessing" but of accurately determining, on a computerized basis, the days when the working capacity of a worker is diminished because of the above-mentioned cyclical disruptions.

[Question] This involves the need for determining the biorhythms of all the more than 30,000 working people of the metallurgical facility. Is it not too complicated?

[Answer] It seems so at first sight. However, when we embarked upon applying this method, we surveyed the frequency rate of accidents recorded during the years in the work sectors with the higher degree of perilousness: trippers, coking plant, sintering, furnaces, rolling mills, spare part plant, and so on. Moreover, in the context of these large departments, we focused on trades that involve accidents, such as those of operators of major technological processes, electricians, fitters, and so forth.

[Question] Practically, which are the sectors where steps have been taken to grant days off to workers on the basis of biorhythmographs.

[Answer] We have started with the thick sheet rolling mill No 1. The chart of workers' days off is now prepared based on the individual biorhythmograph of each worker. As a preliminary step we collected the birth dates, which were fed into the computer and provided a personal card. The variations of the biorhythms obtained in this manner, phased out over a year, allow the foremen to schedule the workers' days off precisely on their "critical days."

[Question] How many persons were tested and provided with such biorhythmographs?

[Answer] More than 1,000 so far. We are making intensive efforts to expand the use of this method, as I also indicated above, to all the sectors where labor accidents may occur more often

[Question] Can we talk about advantages?

[Answer] Yes. Although it is still early for discussing too much such issues, we already can assert that by studying and applying the biorhythms in preventing and combating labor accidents we gain two major benefits: we prevent

the injuring of people and the breakdown of equipment. Imagine the efficiency level of this drive in light of the fact that one minute stoppage of one facility in the metallurgical combine results in the loss of products valued at hundreds of thousands of lei. We avoid the stoppage of this facility in that minute by having it operated on a particular day by another worker, who experiences the cycle of positive physical, emotional and mental capacity, instead of a worker who would experience a critical day.

After my discussion with Engr G. Moraru I no longer had any doubt in regard to the dialog which I overheard at the entrance to the Galati Metallurgical Combine. The arguments, concerns and facts presented at length by Engr Moraru helped me realize that these things actually occur. The days off are scheduled on the specific chart in light of the critical days indicated in the bio-rhythmographs prepared for every worker by the computer. It is a new, modern theory, which, thanks to the efforts of research workers, the labor safety department and the managing body of the Galati Metallurgical Combine, is for the first time in Romania materialized in the metallurgical industry, to the benefit of production and the workers' health.

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